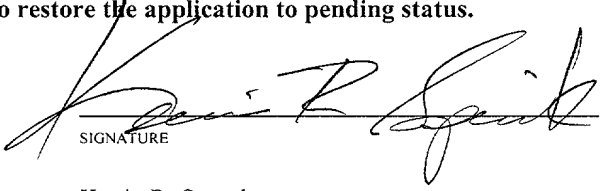


FORM PTO-1390 OFFICE (REV 11-2000)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK	ATTORNEY'S DOCKET NUMBER 449122002200
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. § 371			U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 09/787814 Not yet Assigned
INTERNATIONAL APPLICATION NO. PCT/DE99/02935	INTERNATIONAL FILING DATE 15 September 1999	PRIORITY DATE CLAIMED 24 September 1998	
TITLE OF INVENTION METHOD FOR EXCHANGING SIGNALING INFORMATION FOR AT LEAST ONE CALL CONNECTION THAT CAN BE SWITCHED VIA A PACKET-SWITCHED NETWORK			
APPLICANT(S) FOR DO/EO/US Thomas LANGE et al.			
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information			
1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371 2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371 3. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below. 4. <input checked="" type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (PCT Article 31) 5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau) b. <input checked="" type="checkbox"/> has been communicated by the International Bureau. c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). <input checked="" type="checkbox"/> An English language translation of the International Application under PCT Article 19 (35 U.S.C. 371(c)(2)). a. <input checked="" type="checkbox"/> is attached hereto b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4) <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) a. <input checked="" type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau) b. <input type="checkbox"/> have been communicated by the International Bureau c. <input type="checkbox"/> have not been made, however, the time limit for making such amendments has NOT expired d. <input type="checkbox"/> have not been made and will not be made <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)) 9. <input checked="" type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)). 10. <input checked="" type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5))			
Items 11. to 16. below concern document(s) or information included:			
11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98 12. <input checked="" type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. 13. <input checked="" type="checkbox"/> A FIRST preliminary amendment 14. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. 15. <input type="checkbox"/> A substitute specification 16. <input type="checkbox"/> A change of power of attorney and/or address letter 17. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter 2 and 35 U.S.C. 1.821 - 1.825 18. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4). 19. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4) 20. <input checked="" type="checkbox"/> Other items or information. 1. IPER 2. International Search Report 3. Return receipt postcard			

CERTIFICATE OF HAND DELIVERY

I hereby certify that this correspondence is being hand filed with the United States Patent and Trademark Office in Washington, D.C. on March 23, 2001

LaVerne Whetstone

U.S. APPLICATION NO (if known, see 37 CFR 1.5) Not yet Assigned 09/787814		INTERNATIONAL APPLICATION NO PCT/DE99/02935		ATTORNEY'S DOCKET NUMBER 449122002200	
21. <input checked="" type="checkbox"/> The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO.....\$1,000.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO.....\$860.00 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO.....\$710.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provision of PCT Article 33(1)-(4)\$690.00 International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4)\$100.00				CALCULATIONS PTO USE ONLY	
ENTER APPROPRIATE BASIC FEE AMOUNT =				\$860.00	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$0	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$0	
Total claims	5 - 20 =	0	x \$18.00	\$0	
Independent claims	1 - 3 =	0	x \$80.00	\$0	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$270.00	\$0	
TOTAL OF ABOVE CALCULATIONS =				\$860.00	
Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by ½.				\$0	
SUBTOTAL =				\$860.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				+	\$0
TOTAL NATIONAL FEE =				\$860.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				+	\$40.00
TOTAL FEES ENCLOSED =				\$900.00	
				Amount to be refunded:	\$
				charged:	\$
a. <input checked="" type="checkbox"/> A check in the amount of \$ 900.00 to cover the above fees is enclosed.					
b. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment to Deposit Account No. 03-1952. A duplicate copy of this sheet is enclosed.					
NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.					
SEND ALL CORRESPONDENCE TO:					
Kevin R. Spivak Morrison & Foerster LLP 2000 Pennsylvania Avenue, N.W. Washington, D.C. 20006-1888					
 SIGNATURE Kevin R. Spivak Registration No. 43,148					

09/787814

PATENT

Docket No. 449122002200

Client Reference 1998P02674WOUS

CERTIFICATE OF HAND DELIVERY

JC08 Rec'd PCT/PTO 23 MAR 2001

I hereby certify that this correspondence is being hand filed with the United States Patent and Trademark Office in Washington, D.C. on March 23, 2001.

LaVerne Whetstone

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Thomas LANGE et al.

Serial No.: Not yet Assigned

Filing Date: March 23, 2001

For: METHOD FOR EXCHANGING
SIGNALING INFORMATION FOR AT
LEAST ONE CALL CONNECTION
THAT CAN BE SWITCHED VIA A
PACKET-SWITCHED NETWORK

Examiner: To be Assigned

Group Art Unit: To be Assigned

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination on the merits, please amend this application as follows:

In the Specification:

On page 1, between the title and the first paragraph, please insert the following new paragraph:

--This application claims priority to International Application No. PCT/DE99/02935 which was published in the German language on March 30, 2000.--

On page 1, between lines 4 and 5 please insert the heading --TECHNICAL FIELD OF THE INVENTION--.

Please replace the paragraph beginning on page 1, line 7, with the following rewritten paragraph:

--The invention relates to a method of exchanging information and, in particular, to a method of exchanging signaling information for at least one call connection, which can be switched via a packet-switched network, between subscribers of a circuit-switched network.--

On page 1, between lines 6 and 7 please insert the heading --BACKGROUND OF THE INVENTION--.

Please replace the paragraph beginning on page 1, line 12, with the following rewritten paragraph:

--A network constellation known as, for example, "EWSD goes Internet" by Siemens AG, Hofmannstr. 51, D-81359 Munich, published in 1997 under item number A50001-N2-P65-2-7600, figure on page 7, is used as a basis.--

Please replace the paragraph beginning on page 1, line 18, with the following rewritten paragraph:

--A circuit-switched network includes at least one digital originating exchange (local exchange 2) and at least one digital destination exchange (local exchange 1) which are in each case connected directly or indirectly via at least one digital transit exchange to an access node (POP) or in which the functions of such an access node are integrated. Such access nodes enable the originating, destination and/or transit exchanges to be connected to a packet-switched network, for example to the Internet. Subscribers of the circuit-switched network, the terminal

facilities of which are connected to a digital exchange (originating or destination exchange, respectively) can thus set up a call connection to another subscriber of the circuit-switched network via the packet-switched network, for example by means of Voice over IP.--

Please replace the paragraph beginning on page 1, line 35, with the following rewritten paragraph:

--The advantage of Voice-over-IP telephony mainly lies in that, by compressing the voice into data packets, approximately eight or more Voice-over-IP call connections can now be simultaneously transmitted via one useful channel for a call connection of the conventional circuit-switched network with a transmission rate of, for example, 64 kbit/s. This reduces the costs of a network operator so that the network operator can offer favorable telephone charges to the subscribers using a Voice-over-IP call connection. On the other hand, the subscribers to the Voice-over-IP call connections have to accept a reduced voice quality compared with the conventional circuit-switched call connection.--

Please replace the paragraph beginning on page 3, line 5, with the following rewritten paragraph:

--This procedure represents a disadvantageous solution because the aforementioned VOI functions must be developed in addition to the signaling, billing and traffic control functions already present in a digital originating, destination or transit exchange within such an access node. This solution thus requires intensive development, is expensive and requires dual maintenance. In addition, there is at present no standardized signaling method of VOI call connections which is binding for all network operators.--

On page 3, between lines 14 and 15 please insert the following paragraphs:

--SUMMARY OF THE INVENTION

In one embodiment of the invention, there is a method for exchanging signaling information for at least one call connection, which can be switched via a packet-switched network, between subscribers of a circuit-switched network. The method includes, for example, a digital originating exchange and a digital destination exchange which are coupled via a digital transit exchange to an access node which forms an access to the packet-switched network for the circuit-switched network, in which the signaling and useful information belonging to the call connection can be transmitted via the packet-switched network between such access node in the form of data packets, wherein the signaling information is exchanged between the originating and destination exchanges, instead of via the packet-switched network, via a signaling network coupled to the circuit-switched network.

In one aspect of the invention, the useful information to be transmitted via the packet-switched network, and its associated signaling information to be conducted via the signaling network, are provided with a common, unambiguous identification number.

In another aspect of the invention, the billing method of the circuit-switched network is applied to the call connection established via the packet-switched network by means of the signaling information conducted via the signaling network.

In still another aspect of the invention, a direct connection exists between the access node belonging to the originating exchange and another access node belonging to the destination exchange or between the originating exchange and the destination exchange, in which the functions of the access node are integrated, a traffic control function present in the originating or transit exchange is applied to the traffic control function of the useful information, belonging to the call connection, in the form of data packets and the signaling information to be transmitted via the signaling network.

In yet another aspect of the invention, the digital destination exchange is coupled to a device functioning as an access node instead of the access node.

DETAILED DESCRIPTION OF THE DRAWINGS

Figure 1 shows a network constellation according to the invention.

BRIEF DESCRIPTION OF THE INVENTION--

On page 3, please delete lines 15-22.

Please replace the paragraph beginning on page 3, line 23, with the following rewritten paragraph:

--The invention relates to signaling information belonging to a call connection (e.g. VOI) to be transmitted via a packet-switched network. The signaling information is exchanged via a signaling network, instead of via the packet-switched network, which is connected to the conventional circuit-switched network, between an originating and destination exchange of the circuit-switched network.--

Please replace the paragraph beginning on page 3, line 31, with the following rewritten paragraph:

--The signaling function for setting up and clearing down a connection, and for implementing telephone services (e.g. automatic call back), are already implemented in the digital exchanges, i.e. in the originating, destination and transit exchanges. In addition, the conventional circuit-switched network has a standardized independent signaling network, preferably CCS7. According to the invention, the signaling network available for the

circuit-switched network is advantageously utilized for exchanging signaling information with respect to the call connections to be transmitted via the packet-switched network.--

Please replace the paragraph beginning on page 3, line 11, with the following rewritten paragraph:

--Using their technique, expensive development of a special signaling function for call connections via the packet-switched network, for example via the Internet, are dispensed. Furthermore, the signaling function in an exchange of a circuit-switched network is already standardized so that signaling information can be exchanged between exchanges of different network operators or manufacturers.--

Please replace the paragraph beginning on page 4, line 19, with the following rewritten paragraph:

--An additional advantage of the invention is that the traffic of signaling information, which normally puts a great load on the packet-switched network, is shifted to the signaling network connected to the circuit-switched network and, as a result, the packet-switched network is relieved of the load.--

Please replace the paragraph beginning on page 4, line 26 with the following rewritten paragraph:

--The useful information to be transmitted via the packet-switched network, and its associated signaling functions to be conducted via the signaling network, are provided with a common, unambiguous identification number. As a result, signaling information transmitted via the signaling network can be associated in a simple manner in the exchange with the useful information transmitted via the packet-switched network.--

Please replace the paragraph beginning on page 5, line 1 with the following rewritten paragraph:

--By means of such signaling information conducted via the signaling network, the billing method of the circuit-switched network can also be applied to such a call connection established via the packet-switched network. In this manner, the charging for call connections via the circuit-switched network and for such call connections set up via the packet-switched network can be unified and the administrative expenditure can thus be reduced. In addition, the billing method of the circuit-switched network has a high degree of security (e.g. the prevention of charge losses) which automatically also applies in the billing of call connections via the packet-switched network according to the present embodiment according to the invention.--

Please replace the paragraph beginning on page 5 of line 17 with the following rewritten paragraph:

--The invention is also advantageous when there is a direct connection between the access nodes belonging to an originating exchange and a further access node belonging to a destination exchange or, alternatively, between the originating exchange and the destination exchange, in which the functions of such an access node are integrated (i.e., the data packets of a call connection to be transmitted via the packet-switched network are transmitted between two exchanges without intermediate nodes within the packet-switched network). In this case, the traffic control function present in the originating exchange can also be used for traffic control of the useful information, belonging to a call connection, in the form of data packets and the signaling information to be transmitted via the signaling network.--

Please delete on page 5, lines 34-36.

Please delete on page 6, lines 1-3.

Please replace the paragraph beginning on page 6 of line 4 with the following rewritten paragraph:

--Terminal facilities A-TIn, for example a telephone set of a subscriber of a circuit-switched network, are connected to a digital exchange VST1 hereinafter referred to as an originating exchange. In the originating exchange, switching functions VT1 such as signaling, billing and traffic control are implemented. Furthermore, a so-called interworking unit IWU1 is integrated in the originating exchange, in which voice is converted into voice in the form of data packets of variable or fixed lengths via a useful channel of the conventional circuit-switched network with a transmission rate of, for example, 64 kbit/s.--

Please replace the paragraph beginning on page 6 of line 17 with the following rewritten paragraph:

--This correspondingly applies to a digital exchange VST2, hereinafter referred to as a destination exchange. The terminal facilities, connected to the exchange VST2, of another subscriber of the circuit-switched network are identified by B-TLN and the switching functions implemented in the VST2 are identified by VT2 and the interworking unit is identified by IWU2.--

Please replace the paragraph beginning on page 6 of line 25 with the following rewritten paragraph:

--Between the originating exchange VST1 and the destination exchange VST2, a number of connections are indicated. On the one hand, the originating and destination exchange are connected via a signaling network SN (e.g. CCS7). On the other hand, a number of useful channels or lines for useful information, e.g. p1, p2 and p3 originate at the originating exchange. In Figure 1, the useful channel or, respectively, the line p1 lead into a packet-switched network IN, for example the Internet or an ATM (Asynchronous Transfer Mode) network which is

indicated in the form of a cloud and nodes contained therein, e.g. in the form of network computers, with the aid of interconnected circles, and leads from there to the destination exchange VST2. The useful channel or line designated by p2 represents a direction connection between the originating exchange and the destination exchange. A connection can be established to the destination exchange with the aid of the useful channel or the line p3 via a further digital exchange VST3 which handles the tasks of a transit exchange. A transit exchange normally has no subscriber lines and is connected between two exchanges having subscriber lines. In addition, the transit exchange is connected to the signaling network.--

Please replace the paragraph beginning on page 7 of line 14 with the following rewritten paragraph:

--Assuming party A wishes to set up a packet-switched call connection, e.g. Voice over IP or voice over ATM, with his terminal facility, e.g. A-Tln, to party B with the terminal facility e.g. B-Tln.--

Please replace the paragraph beginning on page 7 of line 18 with the following rewritten paragraph:

--To initialize a call setup, party A uses a terminal facility, e.g. A-Tln, to trigger a loop closure and dials the number (e.g. E.164) of party B. The signaling function implemented in the switching functions VT1 then transmits signaling information, e.g. in CCS7 format, with respect to the call setup request via the signaling network in the direction of the destination exchange addressed with the dialed number, e.g. VST2. The signaling information belonging to the desired call connection is provided with an unambiguous identification number which is preferably entered in the data section of the signaling information present, for example, in CCS7 format. The destination exchange sends a ring tone to a terminal facility, for example B-Tln of party B. Party B accepts the call. The destination exchange VST2 is informed of this and the signaling

function implemented in the switching functions VT2 sends corresponding signaling information back to the originating exchange via the signaling network.--

Please replace the paragraph beginning on page 8 of line 8 with the following rewritten paragraph:

--In the simplest case, the traffic control function implemented in the switching function selects the useful channel or, respectively line e.g. p2, which leads directly to the destination exchange VST2 via the interworking unit IWU1, by means of the dialed number. The interworking unit is responsible for the conversion of voice via a useful channel of the circuit-switched network with a transmission rate of, for example, 64 kbit/s into voice in the form of data packets. Furthermore, these data packets are provided with the same identification number as their associated signaled information in order to ensure correct correlation between the signaling information and the useful information transmitted via useful channels or lines. The voice which has arrived at the destination exchange in the form of data packets, is converted back into voice via a useful channel of the circuit-switched network by means of the interworking unit IWU2 and transmitted in the direction of the terminal facility of party B with the aid of the switching function VT2.--

On page 10, line 1, please replace "Patent Claims" with --WHAT IS CLAIMED IS--.

In the Claims:

1. (Amended) A method for exchanging signaling information for at least one call connection, which can be switched via a packet-switched network, between subscribers of a circuit-switched network, comprising;

a digital originating exchange and a digital destination exchange which are coupled via a digital transit exchange to an access node which forms an access to the packet-switched network for the circuit-switched network, in which the signaling and useful information belonging to the call connection can be transmitted via the packet-switched network between such access node in the form of data packets,

wherein the signaling information is exchanged between the originating and destination exchanges, instead of via the packet-switched network, via a signaling network coupled to the circuit-switched network.

2. (Amended) The method according to claim 1, wherein the useful information to be transmitted via the packet-switched network, and its associated signaling information to be conducted via the signaling network, are provided with a common, unambiguous identification number.

3. (Amended) The method according to claim 1, wherein the billing method of the circuit-switched network is applied to the call connection established via the packet-switched network by means of the signaling information conducted via the signaling network.

4. (Amended) The method according to claim 1, wherein a direct connection exists between the access node belonging to the originating exchange and another access node belonging to the destination exchange or between the originating exchange and the destination

The following table shows the results of the regression analysis for the dependent variable 'Number of children'.					
Variable	Coefficient				
Intercept	1.50				
Age	0.05				
Gender	0.10				
Marital status	0.20				
Education	0.15				
Income	0.10				
Religion	0.05				
Region	0.10				
Urban/rural	0.15				
Time	0.05				
Constant	1.50				
R-squared	0.10				
F-statistic	1.50				
Probability > F	0.10				
Adjusted R-squared	0.05				
Standard error of estimate	0.10				
Sum of squares	1.50				
Mean square	0.10				
ANOVA					
Source	Sum of Squares	df	Mean Square	F	Significance
Regression	1.50	10	0.15	1.50	0.10
Residual	1.50	10	0.15		
Total	3.00	20			
Adjusted R-squared	0.05				
Standard error of estimate	0.10				
Sum of squares	1.50				
Mean square	0.10				
ANOVA					
Source	Sum of Squares	df	Mean Square	F	Significance
Regression	1.50	10	0.15	1.50	0.10
Residual	1.50	10	0.15		
Total	3.00	20			
Adjusted R-squared	0.05				
Standard error of estimate	0.10				
Sum of squares	1.50				
Mean square	0.10				
ANOVA					
Source	Sum of Squares	df	Mean Square	F	Significance
Regression	1.50	10	0.15	1.50	0.10
Residual	1.50	10	0.15		
Total	3.00	20			
Adjusted R-squared	0.05				
Standard error of estimate	0.10				
Sum of squares	1.50				
Mean square	0.10				
ANOVA					
Source	Sum of Squares	df	Mean Square	F	Significance
Regression	1.50	10	0.15	1.50	0.10
Residual	1.50	10	0.15		
Total	3.00	20			
Adjusted R-squared	0.05				
Standard error of estimate	0.10				
Sum of squares	1.50				
Mean square	0.10				
ANOVA					
Source	Sum of Squares	df	Mean Square	F	Significance
Regression	1.50	10	0.15	1.50	0.10
Residual	1.50	10	0.15		
Total	3.00	20			
Adjusted R-squared	0.05				
Standard error of estimate	0.10				
Sum of squares	1.50				
Mean square	0.10				
ANOVA					
Source	Sum of Squares	df	Mean Square	F	Significance
Regression	1.50	10	0.15	1.50	0.10
Residual	1.50	10	0.15		
Total	3.00	20			
Adjusted R-squared	0.05				
Standard error of estimate	0.10				
Sum of squares	1.50				
Mean square	0.10				
ANOVA					
Source	Sum of Squares	df	Mean Square	F	Significance
Regression	1.50	10	0.15	1.50	0.10
Residual	1.50	10	0.15		
Total	3.00	20			
Adjusted R-squared	0.05				
Standard error of estimate	0.10				
Sum of squares	1.50				
Mean square	0.10				
ANOVA					
Source	Sum of Squares	df	Mean Square	F	Significance
Regression	1.50	10	0.15	1.50	0.10
Residual	1.50	10	0.15		
Total	3.00	20			
Adjusted R-squared	0.05				
Standard error of estimate	0.10				
Sum of squares	1.50				
Mean square	0.10				
ANOVA					
Source	Sum of Squares	df	Mean Square	F</	

Please add the following new claim:

--5. The method according to claim 1, wherein the digital destination exchange is coupled to a device functioning as an access node instead of the access node.--

In the Abstract:

Please replace the Abstract in its entirety with the Abstract attached hereto.

REMARKS

The above amendments to the specification, claims and abstract have been made to place the application in proper U.S. format and to conform with proper grammatical and idiomatic English. None of the amendments herein are made for reasons related to patentability. No new matter has been added.

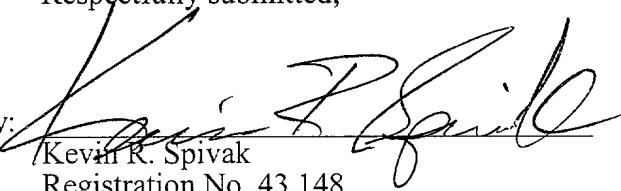
Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned **"Version with markings to show changes made"**.

In the event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 449122002200. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Respectfully submitted,

Dated: March 23, 2001

By:


Kevin R. Spivak
Registration No. 43,148

Morrison & Foerster LLP
2000 Pennsylvania Avenue, N.W.
Washington, D.C. 20006-1888
Telephone: (202) 887-6924
Facsimile: (202) 887-0763

VERSION WITH MARKINGS TO SHOW CHANGES MADE

For the convenience of the Examiner, the changes made are shown below with deleted text in strikethrough and added text in underline.

In the Specification:

Page 1 before the first paragraph, has been amended to include the following insert:

This application claims priority to International Application No. PCT/DE99/02935 which was published in the German language on March 30, 2000.

Page 1, between lines 4 and 5 has been amended to include the following heading:

TECHNICAL FIELD OF THE INVENTION.

Paragraph beginning on line 7 of page 1 has been amended as follows:

The invention relates to a method of exchanging information and, in particular, to a method of ~~for~~ exchanging signaling information for at least one call connection, which can be switched via a packet-switched network, between subscribers of a circuit-switched network, ~~according to the preamble of claim 1.~~

Page 1, between lines 6 and 7 has been amended to include the following heading:

BACKGROUND OF THE INVENTION.

Paragraph beginning on line 12 of page 1 has been amended as follows:

Accordingly, A network constellation as ~~known~~, known as, for example, ~~from a customer~~ brochure "EWSD goes Internet" by Siemens AG, Hofmannstr. 51, D-81359 Munich, published in 1997 under item number A50001-N2-P65-2-7600, figure on page 7, is used as a basis.

Paragraph beginning on line 18 of page 1 has been amended as follows:

Accordingly, A circuit-switched network includes ~~contains~~ at least one digital originating exchange (local exchange 2) and at least one digital destination exchange (local exchange 1) which are in each case connected directly or indirectly via at least one digital transit exchange to an access node (POP) or in which the functions of such an access node are integrated. Such access nodes enable the originating, destination and/or transit exchanges to be connected to a packet-switched network, for example to the Internet. Subscribers of the circuit-switched network, the terminal facilities of which are connected to a digital exchange (originating or destination exchange, respectively) can thus set up a call connection to another subscriber of the circuit-switched network via the packed-switched network, for example by means of Voice over IP.

Paragraph beginning on line 35 of page 1 has been amended as follows:

The advantage of Voice-over-IP telephony mainly lies in that, by compressing the voice into data packets, approximately eight or more Voice-over-IP call connections can now be simultaneously transmitted via one useful channel for a call connection of the conventional circuit-switched network with a transmission rate of, for example, 64 kbit/s. This reduces the costs ~~to be borne by~~ of a network operator so that the network operator can offer favorable telephone charges to the subscribers using a Voice-over-IP call connection. On the other hand, the subscribers to the Voice-over-IP call connections have to accept a reduced voice quality compared with the conventional circuit-switched call connection.

Paragraph beginning on line 5 of page 3 has been amended as follows:

This procedure represents a disadvantageous solution because the aforementioned VOI functions must be developed in addition ~~additionally~~ to the signaling, billing and traffic control functions already present in a digital originating, destination or transit exchange within such an access node. This solution thus requires intensive development, is expensive and requires dual maintenance. In addition, there is at present no standardized signaling method of VOI call connections which is binding for all network operators.

On page 3, between lines 14 and 15 please insert the following paragraphs:

--SUMMARY OF THE INVENTION

In one embodiment of the invention, there is a method for exchanging signaling information for at least one call connection, which can be switched via a packet-switched network, between subscribers of a circuit-switched network. The method includes, for example, a digital originating exchange and a digital destination exchange which are coupled via a digital transit exchange to an access node which forms an access to the packet-switched network for the circuit-switched network, in which the signaling and useful information belonging to the call connection can be transmitted via the packet-switched network between such access node in the form of data packets, wherein the signaling information is exchanged between the originating and destination exchanges, instead of via the packet-switched network, via a signaling network coupled to the circuit-switched network.

In one aspect of the invention, the useful information to be transmitted via the packet-switched network, and its associated signaling information to be conducted via the signaling network, are provided with a common, unambiguous identification number.

In another aspect of the invention, the billing method of the circuit-switched network is applied to the call connection established via the packet-switched network by means of the signaling information conducted via the signaling network.

In still another aspect of the invention, a direct connection exists between the access node belonging to the originating exchange and another access node belonging to the destination exchange or between the originating exchange and the destination exchange, in which the functions of the access node are integrated, a traffic control function present in the originating or transit exchange is applied to the traffic control function of the useful information, belonging to the call connection, in the form of data packets and the signaling information to be transmitted via the signaling network.

In yet another aspect of the invention, the digital destination exchange is coupled to a device functioning as an access node instead of the access node.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows a network constellation according to the invention.

DETAILED DESCRIPTION OF THE INVENTION--

Page 3, lines 15-22 has been amended as follows:

~~It is, therefore, the object of the invention to develop a method of the type specified in the preamble of claim 1 to such an extent that the aforementioned disadvantages are eliminated.~~

~~This object is achieved by the features specified in the characterizing clause of claim 1.~~

~~Further developments of the invention are characterized in the subclaims.~~

Paragraph beginning on line 23 of page 3 has been amended as follows:

~~The principle of the~~ The invention consists in that the relates to signaling information belonging to a call connection (e.g. VOI) to be transmitted via the a packet-switched network. The signaling information is exchanged ,instead of via the packet-switched network, instead of via the packet-switched network, via a signaling network, which is connected to the conventional

circuit-switched network, between an originating and destination exchange of the circuit-switched network.

Paragraph beginning on line 31 of page 3 has been amended as follows:

~~This is made possible by the circumstance that the~~ The signaling function for setting up and clearing down a connection, and for implementing telephone services (e.g. automatic call back), are already implemented in the digital exchanges, ~~that is to say i.e.~~ in the originating, destination and transit exchanges. In addition, the conventional circuit-switched network has a standardized independent signaling network, preferably CCS7. According to the invention, the signaling network available for the circuit-switched network is advantageously utilized for exchanging signaling information with respect to the call connections to be transmitted via the packet-switched network.

Paragraph beginning on line 11 of page 4 has been amended as follows:

~~This dispenses with any~~ Using their technique, expensive development of a special signaling function for call connections via the packet-switched network, for example via the Internet, are dispensed. Furthermore, the signaling function in an exchange of a circuit-switched network is already standardized so that signaling information can be exchanged between exchanges of different network operators or manufacturers.

Paragraph beginning on line 19 of page 4 has been amended as follows:

An additional advantage of the invention is ~~can be seen in the fact~~ that the traffic of signaling information, which normally puts a great load on the packet-switched network, is shifted to the signaling network connected to the circuit-switched network and, as a result, the packet-switched network is relieved of the load.

Paragraph beginning on line 26 of page 4 has been amended as follows:

~~According to an advantageous development of the invention, the~~ The useful information to be transmitted via the packet-switched network, and its associated signaling functions to be conducted via the signaling network, are provided with a common, unambiguous identification number. As a result, signaling information transmitted via the signaling network can be associated in a simple manner in the exchange with the useful information transmitted via the packet-switched network.

Paragraph beginning on line 1 of page 5 has been amended as follows:

~~A further advantageous embodiment of the invention provides that, by~~ By means of such signaling information conducted via the signaling network, the billing method of the circuit-switched network can also be applied to such a call connection established via the packet-switched network. In this manner, the charging for call connections via the circuit-switched network and for such call connections set up via the packet-switched network can be unified and the administrative expenditure can thus be reduced. In addition, the billing method of the circuit-switched network has a high degree of security (e.g. the prevention of charge losses) which automatically also applies in the billing of call connections via the packet-switched network according to the present embodiment according to the invention.

Paragraph beginning on line 17 of page 5 has been amended as follows:

~~An advantageous further development of the~~ The invention is also advantageous when ~~relates to the case where~~ there is a direct connection between the access nodes belonging to an originating exchange and a further access node belonging to a destination exchange or, alternatively, between the originating exchange and the destination exchange, in which the functions of such an access node are integrated: (i.e., the data packets of a call connection to be transmitted via the packet-switched network are transmitted between two exchanges without

intermediate nodes within the packet-switched network). ~~With this assumption,~~ In this case, the traffic control function present in the originating exchange can also be used for traffic control of the useful information, belonging to a call connection, in the form of data packets and the signaling information to be transmitted via the signaling network.

Paragraph beginning on lines 34-36 of page 5 has been amended as follows:

~~In the text which follows, an exemplary embodiment of the invention is described in greater detail with reference to a drawing.~~

Paragraph beginning on line 1 of page 6 has been amended as follows:

~~The figure shows a network constellation to which the method according to the invention can be applied.~~

Paragraph beginning on line 4 of page 6 has been amended as follows:

Terminal facilities A-Tln, for example a telephone set of a subscriber of a circuit-switched network, are connected to a digital exchange VST1 hereinafter referred to as an ~~which will be called~~ originating exchange, ~~in the text which follows.~~ In the originating exchange, switching functions VT1 such as, e.g. signaling, billing and traffic control are implemented. Furthermore, a so-called interworking unit IWU1 is integrated in the originating exchange, in which voice is converted into voice in the form of data packets of variable or fixed lengths via a useful channel of the conventional circuit-switched network with a transmission rate of, for example, 64 kbit/s.

Paragraph beginning on line 17 of page 6 has been amended as follows:

This correspondingly applies to a digital exchange VST2, hereinafter referred to as a ~~which is called~~ destination exchange, ~~in the text which follows.~~ The terminal facilities, connected to the exchange VST2, of another subscriber of the circuit-switched network are

identified by B-TLN and the switching functions implemented in the VST2 are identified by VT2 and the interworking unit is identified by IWU2.

Paragraph beginning on line 25 of page 6 has been amended as follows:

Between the originating exchange VST1 and the destination exchange VST2, a number of connections are indicated. On the one hand, the originating and destination exchange are connected via a signaling network SN (e.g. CCS7). On the other hand, a number of useful channels or lines for useful information, e.g. p1, p2 and p3 originate at the originating exchange. In the figure Figure 1, the useful channel or, respectively, the line p1 lead into a packet-switched network IN, for example the Internet or an ATM (Asynchronous Transfer Mode) network which is indicated in the form of a cloud and nodes contained therein, e.g. in the form of network computers, with the aid of interconnected circles, and leads from there to the destination exchange VST2. The useful channel or line designated by p2 represents a direction connection between the originating exchange and the destination exchange. A connection can be established to the destination exchange with the aid of the useful channel or the line p3 via a further digital exchange VST3 which handles the tasks of a transit exchange. A transit exchange normally has no subscriber lines and is connected between two exchanges having subscriber lines. In addition, the transit exchange is connected to the signaling network.

Paragraph beginning on line 14 of page 7 has been amended as follows:

Assuming ~~an~~ A party A wishes to set up a packet-switched call connection, e.g. Voice over IP or voice over ATM, with his terminal facility, e.g. A-Tln, to ~~a~~ B party B with the terminal facility e.g. B-Tln.

Paragraph beginning on line 18 of page 7 has been amended as follows:

To initialize a call setup, ~~the A party A~~ A uses a terminal facility, e.g. A-TIn, to trigger a loop closure and dials the number (e.g. E.164) of ~~the B party B~~. The signaling function implemented in the switching functions VT1 then transmits signaling information, e.g. in CCS7 format, with respect to the call setup request via the signaling network in the direction of the destination exchange addressed with the dialed number, e.g. VST2. The signaling information belonging to the desired call connection is provided with an unambiguous identification number which is preferably entered in the data section of the signaling information present, for example, in CCS7 format. The destination exchange sends a ring tone to a terminal facility, for example B-TIn of ~~the B party B~~. ~~The B party~~ Party B accepts the call. The destination exchange VST2 is informed of this and the signaling function implemented in the switching functions VT2 sends corresponding signaling information back to the originating exchange via the signaling network.

Paragraph beginning on line 8 of page 8 has been amended as follows:

In the simplest case, the traffic control function implemented in the switching function selects the useful channel or, respectively line e.g. p2, which leads directly to the destination exchange VST2 via the interworking unit IWU1, by means of the dialed number. The interworking unit is responsible for the conversion of voice via a useful channel of the circuit-switched network with a transmission rate of, for example, 64 kbit/s into voice in the form of data packets. Furthermore, these data packets are provided with the same identification number as their associated signaled information in order to ensure correct correlation between the signaling information and the useful information transmitted via useful channels or lines. The voice which has arrived at the destination exchange in the form of data packets, is converted back into voice via a useful channel of the circuit-switched network by means of the interworking unit IWU2 and transmitted in the direction of the terminal facility of ~~the B party B~~ with the aid of the switching function VT2.

On page 10, line 1, please replace "Patent Claims" with --WHAT IS CLAIMED IS--.

In the Claims:

1. (Amended) A method for exchanging signaling information for at least one call connection, which can be switched via a packet-switched network, between subscribers of a circuit-switched network, comprising:

a ~~which contains at least one~~ digital originating exchange (VST1) and ~~at least one a~~ digital destination exchange (VST2) which are ~~in each case connected directly or indirectly via at least one~~ coupled via a digital transit exchange (VST3) to an access node ~~or in which the functions of such an access node are integrated,~~ which forms an access to the packet-switched network for the circuit-switched network, in which the signaling and useful information belonging to ~~at least one such~~ the call connection can be transmitted via the packet-switched network between such access nodes in the form of data packets,

~~characterized in that~~ wherein the ~~such~~ signaling information is exchanged between ~~such an~~ the originating and destination exchanges, instead of via the packet-switched network, via a signaling network (SN) ~~connected~~ coupled to the circuit-switched network.

2. (Amended) The method ~~as claimed in~~ according to claim 1, ~~characterized in that~~ wherein the useful information to be transmitted via the packet-switched network, and its associated signaling information to be conducted via the signaling network, are provided with a common, unambiguous identification number.

3. (Amended) The method according to claim 1, wherein ~~as claimed in one of the preceding claims,~~ ~~characterized in that~~ the billing method of the circuit-switched network is

applied to ~~such a~~ the call connection established via the packet-switched network by means of ~~such~~ the signaling information conducted via a the signaling network (SN).

4. (Amended) The method according to claim 1, wherein ~~as claimed in one of the preceding claims, characterized in that, assuming that a direct connection (p2) exists between the access nodes belonging to the an originating exchange (VST1) and a further another access node belonging to the a destination exchange (VST2) or between the originating exchange and the destination exchange, in which the functions of the such-an access node are integrated, the a traffic control function present in an the originating or transit exchange is applied to the traffic control function of the useful information, belonging to a the call connection, in the form of data packets and the signaling information to be transmitted via the signaling network.~~

Please add the following new claim:

5. The method according to claim 1, wherein the digital destination exchange is coupled to a device functioning as an access node instead of the access node.

In the Abstract:

Please replace the Abstract in its entirety with the Abstract attached hereto.

ABSTRACT

METHOD FOR EXCHANGING SIGNALING INFORMATION FOR AT LEAST ONE CALL CONNECTION THAT CAN BE SWITCHED VIA A PACKET-SWITCHED NETWORK

Signaling information belonging to a call connection to be transmitted via a packet-switched network is exchanged, instead of via a packet-switched network, via a signaling network connected to the conventional circuit-switched network, between an originating exchange and a destination exchange of the circuit-switched network.

09:34:03
10:22:44

1/PRTS

09/787814

GR 98 P 2674

JCO8 Rec'd PCT/PTO 23 MAR 2001

Description

Method for exchanging signaling information for at least one call connection that can be switched via a packet-switched network

The invention relates to a method for exchanging signaling information for at least one call connection, which can be switched via a packet-switched network, between subscribers of a circuit-switched network according to the preamble of claim 1.

Accordingly, a network constellation as known, for example, from a customer brochure "EWS Internet" by Siemens AG, Hofmannstr. 51, D-81359 Munich, published in 1997 under item number A50001-N2-P65-2-7600, figure on page 7, is used as a basis.

Accordingly, a circuit-switched network contains at least one digital originating exchange (local exchange 2) and at least one digital destination exchange (local exchange 1) which are in each case connected directly or indirectly via at least one digital transit exchange to an access node (POP) or in which the functions of such an access node are integrated. Such access nodes enable the originating, destination and/or transit exchanges to be connected to a packet-switched network, for example to the Internet. Subscribers of the circuit-switched network, the terminal facilities of which are connected to a digital exchange (originating or destination exchange, respectively) can thus set up a call connection to another subscriber of the circuit-switched network via the packet-switched network, for example by means of Voice over IP.

The advantage of Voice-over-IP telephony mainly lies in that, by compressing the voice into data packets, approximately eight or more Voice-over-IP call connections can now be simultaneously transmitted

09/787814-03201

via one useful channel for a call connection of the conventional circuit-switched network with a transmission rate of, for example, 64 kbit/s. This reduces the costs to be borne by a network operator so that the network operator can offer favorable telephone charges to the subscribers using a Voice-over-IP call connection. On the other hand, the subscribers to the Voice-over-IP call connections have to accept a reduced voice quality compared with the conventional circuit-switched call connection.

To provide such a Voice-over-IP call connection to the subscribers of the circuit-switched network, the aforementioned originating or destination exchanges are connected to an access node to the Internet or the functions of such access nodes are integrated into an originating or destination exchange.

In such an access node, a so-called interworking unit for converting voice via a useful channel of the conventional circuit-switched telephone network (e.g. 64 kbit/s) into voice in the form of data packets to be transmitted via the Internet (Voice over IP = VOI) is provided. Furthermore, the following functions needed for VOI are implemented in an access node:

- a signaling function for connection set-up or clear-down for implementing telephone services (e.g. IN services) and for determining the outgoing transmission link (e.g. a useful channel of a PCM ring or a conventional data line). The signal information is also converted into data packets and transmitted to the destination exchange via the Internet.
- a billing function for the time-and destination-dependent billing for the VOI call connections,

- a traffic control function for evaluating destination numbers of conventional telephony (e.g. E.164) and for converting these into an Internet destination address.

5 This procedure represents a disadvantageous solution because the aforementioned VOI functions must be developed additionally to the signaling, billing and traffic control functions already present in a digital originating, destination or transit exchange within
10 such an access node. This solution thus requires intensive development, is expensive and requires dual maintenance. In addition, there is at present no standardized signaling method of VOI call connections which is binding for all network operators.

15 It is, therefore, the object of the invention to develop a method of the type specified in the preamble of claim 1 to such an extent that the aforementioned disadvantages are eliminated.

20 This object is achieved by the features specified in the characterizing clause of claim 1. Further developments of the invention are characterized in the subclaims.

25 The principle of the invention consists in that the signaling information belonging to a call connection (e.g. VOI) to be transmitted via the packet-switched network is exchanged, instead of via the packet-switched network, via a signaling network, which is connected to the conventional circuit-switched network, between an originating and destination
30 exchange of the circuit-switched network.

 This is made possible by the circumstance that the signaling function for setting up and clearing down a connection and for implementing telephone services (e.g. automatic call back) are already implemented

09787814-03201

in the digital exchanges, that is to say in the originating, destination and transit exchanges. In addition, the conventional circuit-switched network has a standardized independent signaling network, preferably CCS7. According to the invention, the signaling network available for the circuit-switched network is advantageously utilized for exchanging signaling information with respect to the call connections to be transmitted via the packet-switched network.

This dispenses with any expensive development of a special signaling function for call connections via the packet-switched network, for example via the Internet. Furthermore, the signaling function in an exchange of a circuit-switched network is already standardized so that signaling information can be exchanged between exchanges of different network operators or manufacturers.

An additional advantage of the invention can be seen in the fact that the traffic of signaling information, which normally puts a great load on the packet-switched network, is shifted to the signaling network connected to the circuit-switched network and, as a result, the packet-switched network is relieved of the load.

According to an advantageous development of the invention, the useful information to be transmitted via the packet-switched network, and its associated signaling functions to be conducted via the signaling network, are provided with a common, unambiguous identification number. As a result, signaling information transmitted via the signaling network can be associated in a simple manner in the exchange with the useful information transmitted via the packet-switched network.

5 A further advantageous embodiment of the invention provides that, by means of such signaling information conducted via the signaling network, the billing method of the circuit-switched network can also be applied to such a call connection established via the packet-switched network. In this manner, the charging for call connections via the circuit-switched network and for such call connections set up via the packet-switched network can be unified and the administrative expenditure can thus be reduced. In addition, the billing method of the circuit-switched network has a high degree of security (e.g. the prevention of charge losses) which automatically also applies in the billing of call connections via the packet-switched network according to the present embodiment according to the invention.

20 An advantageous further development of the invention relates to the case where there is a direct connection between the access nodes belonging to an originating exchange and a further access node belonging to a destination exchange or, alternatively, between the originating exchange and the destination exchange, in which the functions of such an access node are integrated. i.e., the data packets of a call connection to be transmitted via the packet-switched network are transmitted between two exchanges without intermediate nodes within the packet-switched network. With this assumption, the traffic control function present in the originating exchange can also be used for traffic control of the useful information, belonging to a call connection, in the form of data packets and the signaling information to be transmitted via the signaling network.

35 In the text which follows, an exemplary embodiment of the invention is described in greater detail with reference to a drawing.

The figure shows a network constellation to which the method according to the invention can be applied.

Terminal facilities A-Tln, for example a telephone set of a subscriber of a circuit-switched network, are connected to a digital exchange VST1 which will be called originating exchange in the text which follows. In the originating exchange, switching functions VT1 such as, e.g. signaling, billing and traffic control are implemented. Furthermore, a so-called interworking unit IWU1 is integrated in the originating exchange, in which voice is converted into voice in the form of data packets of variable or fixed lengths via a useful channel of the conventional circuit-switched network with a transmission rate of, for example, 64 kbit/s.

This correspondingly applies to a digital exchange VST2 which is called destination exchange in the text which follows. The terminal facilities, connected to the exchange VST2, of another subscriber of the circuit-switched network are identified by B-TLN and the switching functions implemented in the VST2 are identified by VT2 and the interworking unit is identified by IWU2.

Between the originating exchange VST1 and the destination exchange VST2, a number of connections are indicated. On the one hand, the originating and destination exchange are connected via a signaling network SN (e.g. CCS7). On the other hand, a number of useful channels or lines for useful information, e.g. p1, p2 and p3 originate at the originating exchange. In the figure, the useful channel or, respectively, the line p1 lead into a packet-switched network IN, for example the Internet or an ATM (Asynchronous Transfer Mode) network which is indicated in the form of a cloud and nodes contained therein, e.g. in the form of

network computers, with the aid of interconnected circles, and leads from there to the destination exchange VST2. The useful channel or line designated by p2

09:37:34.03201
TDEED-4E2B40

represents a direction connection between the originating exchange and the destination exchange. A connection can be established to the destination exchange with the aid of the useful channel or the line p3 via a further digital exchange VST3 which handles the tasks of a transit exchange. A transit exchange normally has no subscriber lines and is connected between two exchanges having subscriber lines. In addition, the transit exchange is connected to the signaling network.

The possible connections between two digital exchanges described above can be in combination with one another or considered to be alternatives.

Assuming an A party wishes to set up a packet-switched call connection, e.g. Voice over IP or voice over ATM, with his terminal facility, e.g. A-Tln, to a B party with the terminal facility e.g. B-Tln.

To initialize a call setup, the A party uses a terminal facility, e.g. A-Tln, to trigger a loop closure and dials the number (e.g. E.164) of the B party. The signaling function implemented in the switching functions VT1 then transmits signaling information, e.g. in CCS7 format, with respect to the call setup request via the signaling network in the direction of the destination exchange addressed with the dialed number, e.g. VST2. The signaling information belonging to the desired call connection is provided with an unambiguous identification number which is preferably entered in the data section of the signaling information present, for example, in CCS7 format. The destination exchange sends a ring tone to a terminal facility, for example B-Tln of the B party. The B party accepts the call. The destination exchange VST2 is informed of this and the signaling function implemented in the switching

functions VT2 sends corresponding signaling information back to the originating exchange via the signaling network.

After the arrival of the returned signaling information in the originating exchange, the VOI call
5 connection is established, for example in the form of a useful channel or a switched line, via a further function of the switching function VT1.

In the simplest case, the traffic control function implemented in the switching function selects
10 the useful channel or, respectively line e.g. p2, which leads directly to the destination exchange VST2 via the interworking unit IWU1, by means of the dialed number. The interworking unit is responsible for the conversion of voice via a useful channel of the circuit-switched
15 network with a transmission rate of, for example, 64 kbit/s into voice in the form of data packets. Furthermore, these data packets are provided with the same identification number as their associated signaled information in order to ensure correct correlation
20 between the signaling information and the useful information transmitted via useful channels or lines. The voice which has arrived at the destination exchange in the form of data packets, is converted back into voice via a useful channel of the circuit-switched
25 network by means of the interworking unit IWU2 and transmitted in the direction of the terminal facility of the B party with the aid of the switching function VT2.

As an alternative to this, or in combination with the aforementioned case, the traffic control
30 function implemented in the switching functions VT1 can convert the dialed number into a destination address of the packet-switched network (Internet address) and uses it to select the useful channel or, respectively, line, e.g. p1 via which a call connection to the destination
35 exchange is established, with the aid of the interworking unit IWU, via the packet-switched network

09787814-03201

IN (e.g. the Internet). Processing and forwarding of the incoming voice in the form of data packets in the destination exchange proceeds analogously to the method explained above.

5 Furthermore, the traffic control function implemented in the switching functions VT1 can select by means of the dialed number the useful channel or line, e.g. p3 which leads to the destination exchange not directly but via a transit exchange VST3. To be
10 able to switch through the useful or call connection in the transit exchange, the transit exchange receives signaling information of the type specified above, both from the originating exchange and from the destination exchange.

15 In addition, a charge meter can be started by the billing function implemented in the switching function VST1 after arrival of signaling information, coming from the destination or transit exchange, in the originating exchange.

20 A method for clearing down the connection or, respectively, for implementing telephone services such as, e.g. automatic call back, can proceed analogously to the procedure described above.

09:28:14.03201
T02204B28460

Patent claims

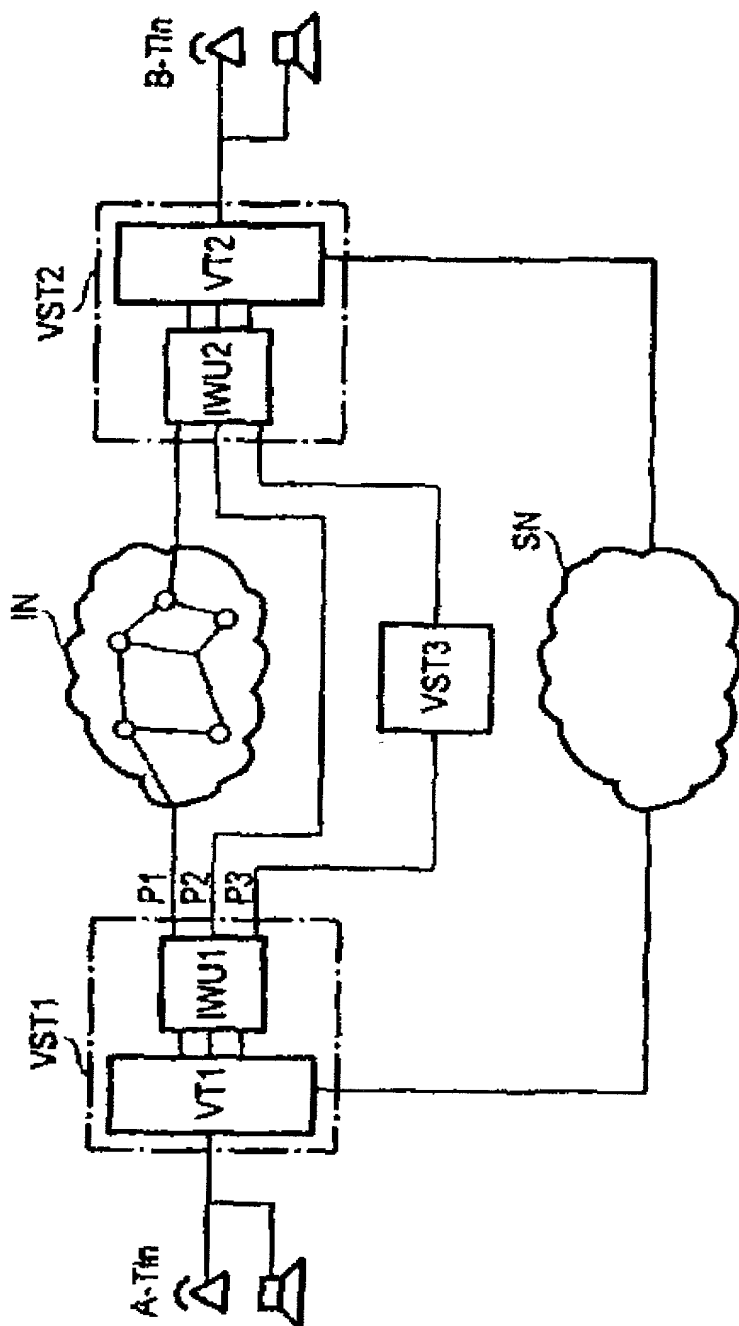
1. A method for exchanging signaling information for at least one call connection, which can be switched via a packet-switched network, between subscribers of a circuit-switched network which contains at least one digital originating exchange (VST1) and at least one digital destination exchange (VST2) which are in each case connected directly or indirectly via at least one digital transit exchange (VST3) to an access node or in which the functions of such an access node are integrated, which forms an access to the packet-switched network for the circuit-switched network, in which the signaling and useful information belonging to at least one such call connection can be transmitted via the packet-switched network between such access nodes in the form of data packets, characterized in that such signaling information is exchanged between such an originating and destination exchange, instead of via the packet-switched network, via a signaling network (SN) connected to the circuit-switched network.
2. The method as claimed in claim 1, characterized in that the useful information to be transmitted via the packet-switched network, and its associated signaling information to be conducted via the signaling network, are provided with a common, unambiguous identification number.
3. The method as claimed in one of the preceding claims, characterized in that the billing method of the circuit-switched network is applied to such a call connection established via the packet-switched network by means of such signaling information conducted via a signaling network (SN).

4. The method as claimed in one of the preceding claims, characterized in that, assuming that a direct connection (p2) exists between the access nodes belonging to an originating exchange (VST1) and a
5 further access node belonging to a destination exchange (VST2) or between the originating exchange and the destination exchange, in which the functions of such an access node are integrated, the traffic control function present in an originating or transit exchange
10 is applied to the traffic control of the useful information, belonging to a call connection, in the form of data packets and signaling information to be transmitted via the signaling network (SN).

T0220-4823250

Method for exchanging signaling information for at least one call connection that can be switched via a packet-switching network

The principle of the invention consists in that the signaling information belonging to a call connection to be transmitted via the packet-switched network (e.g. IN) is exchanged, instead of via the packet-switched network, via a signaling network (SN) connected to the conventional circuit-switched network, between an originating exchange (VST1) and a destination exchange (VST2) of the circuit-switched network.



Declaration and Power of Attorney For Patent Application

Erklärung Für Patentanmeldungen Mit Vollmacht

German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

Verfahren zum Austausch von
Signalisierungsinformationen für wenigstens
eine über ein paketvermittelndes Netz
vermittelbare Gesprächsverbindung

deren Beschreibung

(zutreffendes ankreuzen)

☒ hier beigelegt ist.

☒ am 15. September 1999 als

PCT internationale Anmeldung:

PCT Anwendungsnummer PCT/DE99/02935

eingereicht wurde und am _____

abgeändert wurde (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich den Inhalt der obige ☐ Patentanmeldung einschliesslich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäss Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde, und habe auch alle Auslandsanmeldungen für ein Patent oder eine Erfindersurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

the specification of which

(check one)

☐ is attached hereto.

☐ was filed on _____ as

PCT international application

PCT Application No.

and was amended on

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

093844-0201

German Language Declaration

Prior foreign applications
Priorität beansprucht

Priority Claimed

198 43 881.8 Germany 24.September 1998
(Number) (Country) (Day Month Year Filed)
(Nummer) (Land) (Tag Monat Jahr eingereicht)

☒ ☐
Yes No
Ja Nein

(Number) (Country) (Day Month Year Filed)
(Nummer) (Land) (Tag Monat Jahr eingereicht)

☐ ☐
Yes No
Ja Nein

(Number) (Country) (Day Month Year Filed)
(Nummer) (Land) (Tag Monat Jahr eingereicht)

☐ ☐
Yes No
Ja Nein

Ich beanspruche hiermit gemäss Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 122 offenbart ist, erkenne ich gemäss Absatz 37, Bundesgesetzbuch, Paragraph 1.56(a) meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §122, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

(Application Serial No.) (Filing Date)
(Anmeldeseriennummer) (Anmeldedatum)

(Status) (Status)
(patentiert, anhängig, (patented, pending,
aufgegeben) abandoned)

(Application Serial No.) (Filing Date)
(Anmeldeseriennummer) (Anmeldedatum)

(Status) (Status)
(patentiert, anhängig, (patented, pending,
aufgeben) abandoned)

Ich erkläre hiermit, dass alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und dass ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, dass wissentlich und vorsätzlich falsche Angaben gemäss Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden koennen, und dass derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patentes gefährden können.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

097374-0346

German Language Declaration

VERTRETUNGSVOLLMACHT: Als benannter Erfinder beauftrage ich hiermit den nachstehend benannten Patentanwalt (oder die nachstehend benannten Patentanwälte) und/oder Patent-Agenten mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Geschäfte vor dem Patent- und Warenzeichenamt: (Name und Registrationsnummer anführen)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list name and registration number)

And I hereby appoint

Messrs. Laurie A. Axford (Reg No. 35,053), Sanjay S. Bagade (Reg No. 42,280), Joseph Barrera (Reg No. 44,522), Erwin J. Basinski (Reg No. 34,773), Richard R. Batt (Reg No. 43,485), Frank P. Becking (Reg No. 42,309), Kimberly A. Bolin (Reg No. 44,546), Timothy J. Bortree (Reg No. 43,506), Barry E. Bretschneider (Reg No. 28,055), Tyler S. Brown (Reg No. 36,465), Nicholas Buffinger (Reg No. 39,124), Jingming Cai (Reg No. P-44,579), Mark R. Carter (Reg No. 39,131), Robert K. Cerpa (Reg No. 39,933), Peng Chen (Reg No. 43,543), Thomas Chuang (Reg No. P-44,616), Thomas E. Ciotti (Reg No. 21,013), Matthew M. D'Amore (Reg No. 42,457), Raj S. Davé (Reg No. 42,465), Stephen C. Durant (Reg No. 31,506), Carolyn A. Favorito (Reg No. 39,183), David Fehrman (Reg No. 28,600), Héctor Gallegos (Reg No. 40,614), Debra J. Glaister (Reg No. 33,888), Kenneth R. Glick (Reg No. 28,612), Franklin Y. Han (Reg No. 41,055), Charles D. Holland (Reg No. 35,196), Peter Hsieh (Reg No. P-44,780), Madeline I. Johnston (Reg No. 36,174), Richard D. Jordan (Reg No. 33,519), Ararat Kapouytian (Reg No. 40,044), Richard C. Kim (Reg No. 40,046), Kawai Lau (Reg No. 44,461), Elaine K. Lee (Reg No. 41,936), Richard H. Lilley (Reg No. 42,803), Lisa E. Marks (Reg No. 44,901), Thomas D. Mays (Reg No. 34,524), Gladys H. Monroy (Reg No. 32,430), Philip A. Morin (Reg No. P-45,926), Kate H. Murashige (Reg No. 29,959), Catherine M. Polizzi (Reg No. 40,130), William C. Revelos (Reg No. 42,101), Paul J. Riley (Reg No. 38,596), Robert Saltzberg (Reg No. 36,910), Debra A. Shetka (Reg No. 33,309), Terri Shieh-Newton (Reg No. P-47,081), Kevin R. Spivak (Reg No. 43,148), E. Thomas Wheelock (Reg No. 28,825), Thomas G. Wiseman (Reg No. 35,046), Frank Wu (Reg No. 41,386), George C. Yu (Reg No. 44,418), Karen R. Zachow (Reg No. 46,332), Jimmy Zhang (Reg No. P-47,201)

Telefongespräche bitte richten an:
(Name und Telefonnummer)

Direct Telephone Calls to: (name and telephone number)

(202) 887-1500
Ext. _____

Postanschrift:

Send Correspondence to:

Morrison & Foerster L. L. P.
Attorneys at Law
2000 Pennsylvania Avenue, NW, Washington, D. C. 20006-1888

Voller Name des einzigen oder ursprünglichen Erfinders:		Full name of sole or first inventor:	
LANGE, Thomas			
Unterschrift des Erfinders	Datum	Inventor's signature	Date
<i>Thomas Lange</i>	25.1.01		
Wohnsitz		Residence	
D-84034 Landshut, Germany			
Staatsangehörigkeit		Citizenship	
Bundesrepublik Deutschland			
Postanschrift		Post Office Address	
Savignystr. 9			
D-84034 Landshut			
Bundesrepublik Deutschland			
Voller Name des zweiten Miterfinders (falls zutreffend):		Full name of second joint inventor, if any:	
UNGRICH, Joachim			
Unterschrift des Erfinders	Datum	Second Inventor's signature	Date
<i>Joachim Ungrich</i>	30.01.01		
Wohnsitz		Residence	
D-81547 München, Germany			
Staatsangehörigkeit		Citizenship	
Bundesrepublik Deutschland			
Postanschrift		Post Office Address	
Berchtesgadener Str. 8			
D-81547 München			
Bundesrepublik Deutschland			

(Bitte entsprechende Informationen und Unterschriften im Falle von dritten und weiteren Miterfindern angeben).

(Supply similar information and signature for third and subsequent joint inventors).